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ABSTRACT

An instrument was developed to enable a comparison of work values of teachers, parents, and students. It was then utilized to investigate the differences between student groups, within and between schools of different curricula, between vocational and academic teachers and parents of students. The instrument, based on constructs obtained from a literature review, sought to measure the degree of commitment to three work values categories: The Classical (Protestant) Work Ethic, the Consumer (work for profit) Work Ethic, and the Meaningful Work Ethic. A pilot study was conducted to test its validity and reliability. Data for the main study was gathered from four senior high schools in Baltimore County, Maryland. Approximately 2500 students in grades 10 and 11 and 180 teachers participated in the study. Data obtained from the instrument were used to test five hypotheses: (1) Tenth and eleventh grade students from four different high schools scored significantly different means on subtests of the instrument, (2) students from four different schools scored significantly different means on the three work ethic subtests, (3) tenth and eleventh grade students from two different curriculums (vocational and college prep) scored significantly different means on their performance in reacting to three work ethic subtests, (4) academic teachers scored significantly different means than vocational teachers as measured by the three work ethic subtests, (5) students scored significantly different means than teachers when tested on the instrument incorporating three work ethic subtests. Treatment and analyses of data are reported, and the findings are discussed. It is noted that after completion of the study it was decided that an etiological approach to structuring items within seven work ethics would produce more exact and useful information and that accordingly a new instrument was developed for a second phase of the study. (TA)

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FINAL REPORT

VOLUME I

PART C PROJECT 213-07

A COMPARISON OF WORK VALUES HELD BY STUDENTS, PARENTS AND TEACHERS

Directed and Written
by
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and
Robert Gnidziejko

December 1975

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
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INTRODUCTION

VOLUME I

At the beginning of the project it was envisioned that an instrument would be developed which would yield insightful information as to how different people feel about selected factors of work. The literature was studied and to a great extent guided the researchers to stay "close" to what was expounded by others since this was a new venture for this team. After completing exploratory work by developing and testing the instrument for validity and reliability, Phase I survey was conducted. The instrument measured the extent to which individuals adhered to three work ethics: (1) The Classical, (2) Economic, and (3) Meaningful Work Ethic.

Upon completion of this study and achieving further maturity in the topic under study, it was decided that an etiological approach to structuring items within seven work ethics would produce more fruitful, exact and useful information. Accordingly, a new instrument was developed for Phase II of the project. It finally included 60 questions probing for reasons why an individual would agree or disagree and with what intensity to the seven new work ethics.

These seven work ethics were: Altruism Societal, Altruism Employer, Self Developmental, Personal

Satisfaction, Economic, Status and Avoidance. This instrument was developed, tested and used in Phase II of this project which included six counties with students, faculty and parents, whereas Phase I included one county and no parents. The cooperating counties were: Allegany, Calvert, Dorchester, Harford and St. Mary's. Two volumes emerge from this work, one reporting Phase I and the second Phase II.

CHAPTER I

PHASE I

INTRODUCTION

Interest in work values has increased with the national emphasis on Career Education. The aim of Career Education was not to impose any particular set of work values on any individual, but to see that each was exposed to a variety of forms of work values so that each would know and understand those that existed (Hoyt, 1973).

The study of work values was important for if we were to measure motivation in education and in work, it would probably be by means of interest and values inventories (Super, 1957). The focus on values was doubly warranted because interest inventories were widely known and used, whereas values inventories have been little known and used in the practice of counseling (Zytowski, 1973).

A few inventories have been constructed for the purpose of measuring work values (Stefflre, 1959; Super, 1957 and 1962) and occupational values (Kilpatrick, Cummings, and Jennings, 1964; Rosenberg, 1957). Two recent inventories, the Survey of Work Values (Wollack, 1971) and an inventory developed by Davis (1974) sought to measure the degree of commitment to the Classical Work Ethic. In Phase I of this research, an instrument was developed to enable a comparison of work values of teachers and students. The

instrument sought to measure the degree of commitment to three work values categories--the Classical or Traditional Work Ethic, the Consumer Work Ethic and the Meaningful Work Ethic.

Popular literature (Terkel, 1972; Herzberg, 1972; Herrick, 1972; Borow, 1974) expounded the "erosion" of the Classical (Traditional) Work Ethic and considered it not applicable to large segments of American Society. Technological advances, according to these authors, had resulted in making the work ethic in its classic form less meaningful and seemingly less appropriate for the individual. A special interest in this study was to investigate the adherence of students and teachers to the Classical Work Ethic.

Problem of the Study

The problems of this phase of the study were: (1) to develop an instrument with constructs that would enable a comparison of work values adhered to by students, parents and teachers, and (2) to conduct a survey study to investigate the differences between student groups, within and between schools of different curricula, between vocational and academic teachers and parents of students.

Statement of Purpose

The purpose of this study was three-fold:

(1) to provide research evidence relevant to the study of work values of students, teachers and parents in the State of Maryland,

(2) to generate information relevant to procedures and instruments helpful to researchers for further studies in the dynamic area of work values,

(3) to use the findings of the study in developing and implementing teacher-education programs in Career Education, and preemployment information for students leaving school for the world of work.

Need for the Study

(1) There existed a need to study work values.

Studies on the relationships between personality and educational or vocational behavior had been generally unfruitful when personality has been defined as needs or traits (Dukes, 1955; Ivey, 1963). Those who assessed these variables in educational or occupational counseling or selection did so more from blind belief in the importance of personality than from evidence that what they were assessing differentially affects choice or success (Crites, 1969). Needs were so fundamental, so far removed from specific activities and objects, that any one of them could be met in a great variety of ways. Traits were matters of style, also rather remote from specific activities and objects, so any given role, educational or occupational, would be plagued with a variety of styles (Super, 1957). Assessments of needs and traits may have helped us to understand the makeup of people, but they did not help us to predict educational or occupational behavior. Values and interests, however, were closer to actual life

(Super, 1957). It was therefore to values and to interests that educators and personnel workers must have looked if they wanted to attend to motivation in ways relevant to the choices and performances of their students and employees (Super, 1957).

Zytowski (1973) stated, "Understanding the work values of a student or a client in educational and vocational counseling or if an applicant for a position in business or industry is an important aid in clarifying goals and in determining the psychological appropriateness of a given type of education, training, or employment." (p. 191)

Having appreciated the importance of studying work values the editors of the American Vocational Journal (1973) devoted an entire issue to the work ethic theme. The issue's two objectives included the following:

> First, to broaden vocational teachers' and counselors' understanding of the American work ethic; and second to provide content that would inspire vocational teachers and counselors to find ways of helping their students formulate a personal work ethic (p. 25).

(2) There existed a need to develop an instrument to measure work values.

The studies of Kinnane and Suziedelis (1962) indicated in a slight relationship between inventoried interests-work values. Crites (1969), commenting on the Kinnane and Suziedelis (1962) study, stated that there was a need for better refined inventories to measure work values and inferred that the magnitude of the relationship between interests and values was not high because of the instrumentation used. Zytowski (1973) indicated that interest

inventories were widely known and used, whereas work values inventories have been little known and used in the practice of counseling in education.

(3) Since teachers play an important role in the development of student work values (Hudson, 1973; Hoyt, 1972), there was a need to identify the work values of teachers.

A study by Colorado State University (1969) sought to identify work values of teachers. It was reasoned that those teachers who did not possess positive work values could then be offered some type of in-service training to develop positive work attitudes. The study found that teachers receiving a one-week in-service training program, related to work values and occupational orientation, changed to more positive work values.

Herrick (1972) had stated:

> Employees report that they are dealing with a new breed of workers, one less easily satisfied by pay and caring more about the meaningfulness of work. However, they also report a reduced commitment to work. There appears to be among employers a suspicion that the schools are at least partly at fault for not stressing the values of work (p. 22).

To Hoyt (1972) it seemed indefensible to fail to teach youth that employers do value the traditional work ethic and that major violations of it will lead to losing the job. The high rate of job-changing and unemployment which characterizes dropouts and nonvocational graduates prior to about age 25 may have been largely explained by this failure.

Design of the Study

The design of this study was characterized as being a Survey Research type as suggested by Kerlinger (1964). It initially involved the development of an instrument to measure adherence to three work ethics.

The instrument in this study was concerned with work constructs obtained from the literature. A pool of seventy items was generated. The seventy items reflected constructs in each of the three work ethics under consideration--the Classical (Protestant) Work Ethic, the Consumer Work Ethic and the Meaningful Work Ethic. (See pages 23,24, 25 for item analysis and reliability data.)

Statement of Hypotheses

The research hypotheses are presented below. For statistical purposes the hypotheses were converted into the null form in Chapter III.

Hypothesis I

Tenth and eleventh grade students from four different high schools scored significantly different means on subtests of the instrument designed to measure the adherence to three work ethics, identified as the Classical Work Ethic, Consumer Work Ethic, and the Meaningful Work Ethic. (See Definitions.)

Hypothesis II

Students from four different schools in Baltimore County, Maryland scored significantly different means on the three work ethic subtests.

Hypothesis III

Tenth and eleventh grade students from two different curriculums (Vocational and College Prep) scored significantly different means on their performance in reacting to three work ethic subtests.

Hypothesis IV

Academic teachers scored significantly different means than vocational teachers as measured by the three work ethic subtests.

Hypothesis V

Students scored significantly different means than teachers when tested on the instrument incorporating three work ethic subtests.

In Phase I no hypothesis was developed to investigate differences between parents and students because it soon became known that Baltimore County preferred not to get involved with using parents as subjects. However, in Phase II parents were incorporated.

Statement of Procedure

The procedure for Phase I of this study was:

(1) A review of the literature in the fields of Sociology, Psychology, Industrial Psychology, Vocational Education, Management, Industrial Engineering and Education was conducted in order to provide a more comprehensive understanding of the problem area.

(2) Specialists in the fields of Industrial Education, Sociology, and Education were consulted concerning the feasibility and importance of the proposed study.

(3) The selection of subjects (students and teachers) who participated in the study was based on recommendations of industrial teacher educators and research specialists.

(4) An instrument was developed to measure the adherence to three work ethic subtests. The items were based on constructs developed by experts and researchers in the area of work values. An item pool of 70 items was developed from these constructs. (See rationale for items in Chapter II.)

(5) Permission was granted by the Director of Research, Baltimore County Board of Education, to administer the instrument to students in four senior high schools in Baltimore County, Maryland. The schools selected included: a vocational-technical high school, a high school in a rural area of the county, a high school with a large college preparation enrollment, and a high school with a mix of students in a curriculum for preparation for employment or college.

(6) A meeting with each school's principal, Guidance personnel and Chairman of the English Department was held to discuss the study and instrument.

(7) The instrument was administered in all English classes by English teachers who had received instruction regarding the design of the study and standardized administration of the instrument. The same instrument was

administered to teachers in each school by the English Department Chairman. The instrument was administered to approximately 2,500 students and 180 teachers.

(8) Multivariate Analysis of Variance was used to treat data gathered from the instrument developed in this study. Hartley's F max test was used to test the homogenity of variance (Dayton, 1970). All interpretations were made at the .05 level of significance to test the null hypotheses as suggested by Winer (1962). The Newman-Keuls test for multiple comparison of means was used for comparison of more than two means (Dayton, 1970).

(9) An analysis of data from the final survey yielded results, conclusions, and implications of the study.

Assumptions of the Study

The following assumptions were considered with respect to the study:

(1) The subjects responded in accord with their true feelings.

(2) Subjects properly followed directions in completing the instruments and understood the use of a Likert Scale.

Limitations of the Study

(1) Only tenth and eleventh grade students attending senior high schools were used in this study.

(2) The study was limited to 1 county of the state; whereas, Phase II attempts to survey 4 regions of the State of Maryland.

(3) Socio-economic and ethnic backgrounds of students and teachers was not obtained.

(4) The instrument was based on selected work values representing three broad and popular work ethics.

(5) Content validity of the instrument was obtained; however, construct and concurrent validity were not established.

Definition of Terms

Classical Work Ethic: A set of work values that include a preference to work hard, to work regularly because it's one's obligation to society, and to have obedience and respect for authority (Davis, 1974). It also includes a preference to keep active and busy on a job; a preference for satisfaction and enjoyment from doing a job well and a preference to seek a higher level and a better standard of living (Wollack, 1971)--(also called the Protestant, Traditional Work Ethic).

Consumer Work Ethic: A set of work values that include a preference for the economic and/or societal aspects of work (Herzberg, 1974).

Meaningful Work Ethic: A set of work values that include a preference for work that enables one to use his or her skill or talents; preference for work that gives one a feeling of achievement, work that is interesting and challenging; and a preference for work that offers a sense of responsibility (Herzberg, 1974; Terkel, 1972).

Value: A reference to some standard or norm to guide actions, attitudes, comparisons and evaluations; what the individual feels or thinks is desirable (Miller, 1965).

Work: One's efforts aimed at the production of goods and/or services that will be beneficial to one's fellow human beings and/or to oneself (Hoyt, 1971).

Work Value: What the individual feels or thinks is desirable about work (Hoyt, 1971). The various goals that motivate men to work (Super, 1957).

CHAPTER II

DEVELOPMENT OF INSTRUMENT

DESIGN OF MAIN PHASE I STUDY AND TREATMENT OF DATA

This chapter contains a discussion of the following topics: rationale for the instrument, pilot study to investigate the reliability and content validity of the instrument, procedure for main study for Phase I and the treatment of data.

Development of the Instrument

Review of the research was made to find an instrument to test the hypotheses of the study. A few scales have been constructed for the purpose of measuring work values (Stefflre, 1959; Super, 1957; 1962) and occupational values (Kilpatrick, Cummings, and Jennings, 1964; Rosenberg, 1957), but these did not fit the purpose of the study.

From the literature it was decided in Phase I that contemporary work values could be categorized into three distinct work ethics: (1) Classical (Protestant) Work Ethic; (2) Consumer (work-for-profit) Work Ethic; and (3) Meaningful Work as a Work Ethic.

The following sections described the source of the items used in the instrument to measure student and teacher

adherence to the three work ethic areas. (See Appendix A for instrument used in Phase I.)

Classical Work Ethic

Two recent scales, the Survey of Work Values (Wollack, 1971) and a scale developed by David (1974) sought to measure the degree of commitment to the Classical Work Ethic.

This present study considered several items developed by Wollack (1971) and Davis (1974) in the development of the instrument to measure the adherence of students and teachers to the Classical Work Ethic.

The principal aspects of the Protestant (Classical) Work Ethic as described by Weber (1958) were individualism, asceticism, and industriousness. The categories of the Survey of Work Values were selected on the basis of two considerations. The first was the apparent relevance of each category to the secularized interpretation of the Protestant (Classical) Ethic, specifically those dealing with work. Although this selection was judgmental, it narrowed considerably the number of dimensions by eliminating the primarily religious aspects of the ethic. A second consideration was that the categories should be relevant to the literature concerning the Protestant (Classical) Ethic. Wollack (1971) wrote:

> Despite an effort to choose areas of work values that provide a broad interpretation of the Protestant Ethic, the categories of the SWV are by no means exhaustive. Unavoidably, some question may exist regarding any particular aspect of Protestant Ethic that was not included among the subscales. Practi-

cality, however, dictates a relatively brief scale. (p. 332)

The most widely accepted notion of the Protestant Ethic dealt with certain intrinsic aspects of work; that was, work as its own reward. Work was to be valued because it was instrumental to the attainment of external rewards. The three aspects of the Ethic chosen from Wollack's scale included:

Activity Preference: A preference by the worker to keep active on the job.

Pride in Work: The satisfaction and enjoyment a man feels from doing his job well.

Upward Striving: The desire to seek continually a higher level and a better standard of living. (p. 332)

The remaining items used to measure adherence to the Classical Work Ethic came from Davis' (1974) scale. In his study, Davis sought to test two hypotheses: (1) that a strong commitment to the work ethic did not produce a high level of job satisfaction; (2) that workers were more satisfied with the monetary benefits of the job than with non-economic job attributes. The aspect of the Protestant (Classical) Work Ethic chosen from Davis' scale was called the Authoritarian Work Ideology by the writer. This included:

Authoritarian Work Ideology: A preference to work hard, to work regularly because its one's obligation to society, and obedience and respect for authority. (p. 6)

From these four aspects of the Classical (Protestant) Work Ethic and the studies by Wollack (1971) and Davis (1974), scale items for the present study were developed to measure adherence of students and teachers to the Classical Work Ethic. The following ten items were used in the present study to measure this adherence.

Activity Preference:

Item 2 A person should try to stay busy on a job.

Item 6 Whenever he/she can get away with it, a worker should take it easy.

Pride in Work:

Item 17 A worker should feel responsibility to do a good job whether or not his supervisor is around.

Authoritarian Work Ideology:

Item 14 A person should work hard for what he/she earns.

Item 19 Obedience and respect for authority should be the very first requirements of a good worker.

Item 22 Some leisure time is necessary, but it is good hard work that is important to me.

Item 26 The best way to get along in the world is to work hard.

Item 28 To work regularly is a person's obligation to society.

Upward Striving:

Item 9 A job that offers opportunity for advancement is a good job for me.

Item 12 One should always be thinking about pulling himself/herself up in the world by working hard.

Consumer Work Ethic

The second category of work values was included under the Consumer Work Ethic. Reich, in The Greening of America (1971) stated:

> Man's principle activity--work--ceased to be self-expression. He felt little of the normal satisfactions of work; he was a mere cog in production; his tasks no longer expressed his abilities. Man's most basic activity was dominated by the most impersonal of masters--money. Man became alienated from himself as money, not inner needs, called the tune. Man began to differ or abandon his real needs, and increasingly his wants became subject to outside manipulation. Losing both his work-essence and his need-essence, man was no longer a unique individual, but an extension of the production-consumption system. (p. 29)

Herzberg (1974) called our society a "consumer society." People work to "consume" or to "get things." People work for fifty weeks in order to "consume" a two-week vacation. They also work to "consume" interpersonal relationships. According to Striner (1967), work to many was the means by which we provided the goods and services needed and desired by ourselves and our society. The report stated:

> Through the economic rewards of work, we obtain immediate gratification of transient wants, physical assets for enduring satisfactions, and liquid assets for deferrable gratifications. For most of the history of mankind, and for a large part of humanity today, the economic meaning of work is paramount. Work also serves a number of other social purposes. The workplace has always been a place to meet people, converse, and form friendships . . . The economic and societal importance of work has dominated thought about its meaning. (p. 4)

The Consumer Work Ethic consisted of two major aspects--the economic and societal. It was the degree to which economic and societal rewards of work were valued. The second subtest of the present study contained items

reflecting this work ethic. It sought to measure the adherence of students and teachers to the Consumer Work Ethic. The following ten items were used in the Phase I study to measure this adherence to the Consumer Work Ethic:

Economic and Societal:

Item 1 Work is important because it makes me feel like one of the gang.

Item 5 To me the most important part of work is the opportunity to make friends.

Item 7 It is important that a person has a job that he/she knows will be permanent.

Item 10 Work can enable me to look forward to a stable and financially secure future.

Item 15 Work is only important because it can provide the means for leisure.

Item 18 Work is only useful in order to buy the things I need.

Item 21 Money should not be the most important consideration in looking for a job.

Item 23 A good job is a well paying job.

Item 25 The only good part of most jobs is the pay check

Item 27 I would like to do just enough work at my job to get by and get paid for it.

Meaningful Work as a Work Ethic

The third category of work values was included under Meaningful Work as a Work Ethic. Items reflecting this work ethic were extracted from the literature. It was clear from recent research that work played a crucial and unparalleled psychological role in the formation of self-esteem, identity, and a sense of order.

Herzberg (1966) suggested a way of looking at the needs

of workers--and motivation in terms of intrinsic and extrinsic factors. Extrinsic factors, such as inadequate pay, incompetent supervision, or dirty working conditions may have led to dissatisfaction, which may have been reduced in turn by such "hygienic" measures as higher pay and "human relations" training for foremen. But such actions did not make workers satisfied. Satisfaction depended on the provision of intrinsic factors, such as achievement, accomplishment, responsibility, and challenging work. Satisfaction, then, was a function of the content of work; dissatisfaction, then was a function of the environment of work. Hygienic improvements may have made work tolerable, but did not necessarily raise motivation or productivity. The latter depended on making jobs more interesting and important.

Kohn (1972) felt that what workers wanted most, as more than 100 studies in the past 20 years showed was to become masters of their immediate environments and to feel that their work and they themselves were important.

Terkel (1974) in his book, Working, stated "Once we accept the concept of work as something meaningful--not just as the source of a buck--you don't have to worry about finding enough jobs." (p. 23)

The aspects of Meaningful Work as a Work Ethic included the degree to which work was interesting, the use of skill or talent, the feeling of satisfaction and achievement from seeing the results of one's work, responsibility on the job, work that was challenging.

The third subtest developed contained items reflecting these aspects. It sought to measure the adherence of students and teachers to Meaningful Work as a Work Ethic. The following ten items were used in the instrument to measure the adherence to the Meaningful Work Ethic:

Item 3 To me, it's important in an occupation that I can see the results of my work.

Item 4 Responsibility on a job is important to me.

Item 8 Work can be an opportunity to increase my knowledge.

Item 11 It is important that my work be understood and accepted as worthwhile.

Item 13 A job should be both interesting and important to me.

Item 16 To me, work has value when it is challenging.

Item 20 Work should offer a person a sense of satisfaction.

Item 24 Work can be an opportunity for me to acquire new skills and knowledge.

Item 29 Work can provide an opportunity to use my special abilities or aptitudes.

Item 30 Work is important because it is interesting to me.

The Pilot Study

During the earlier months of the project, 1975, a pilot study was conducted at the Maryland Rehabilitation Center, Baltimore, Maryland. The purpose of the pilot study was to establish reliability and to refine the developed instrument to measure adherence to three work ethics. Procedures for the administration of the instrument were also tested.

The Instrument

The instrument, used for the pilot study, consisted of thirty items designed to measure the adherence of people to the three work ethics under study.

The items were based on constructs developed by experts and researchers in the area of work values. An item pool of 70 items was develcped from these constructs.

The 70 items were subjected to a content analysis (face validity) by persons with the interest and background in the problem area. In accordance with the method of reallocation described by Smith and Kendall (1963) 3 judges were instructed to assign each of the 70 items into the defined category that they believed best corresponded with the meaning of the statement. In addition to the three defined categories (Classical, Consumer and Meaningful Work Ethics) a category designated as other was included. The judges were instructed to allocate to this category any item that they believed to correspond poorly with each of the defined categories. The purpose of the reallocation procedure was to determine: (a) whether discriminably of different categories existed, (b) whether the items intended to measure a particular concept were judged to be relevant to that concept.

The criteria for the retention of an item were at least 70 percent allocation to a single category and no more than 20 percent allocation to any second category.

An item was rejected if it failed to meet either of these criteria.

Retained items were submitted to a further reallocation by 3 students. The purpose of this reallocation was to determine whether the researcher's conception of the categories being measured corresponded with the judgment of persons for whom the instrument was intended. An item was eliminated if it was not conceptually clear, as was indicated by allocation of items to other than the intended category.

Final form of the instrument included 30 items, 10 items for each of the three work ethic subtests.

Subjects

Subjects used for the pilot study were staff members of the Maryland Rehabilitation Center. The subjects (N = 78) consisted of vocational instructors, vocational evaluators, psychologists, vocational counselors and secretaries.

Procedure

(1) Permission was granted from staff supervisors to administer the instrument to their staff. Explanation of the study and scale was given.

(2) The instrument was given to staff members in groups of twenty-five to approximate classroom size.

(3) The 30 item instrument was presented to the subjects who were instructed to respond to each

item on a 5-point scale of agreement ranging from strongly agree to strongly disagree. Strength of agreement was computed from a 5-point Likert Scale (Strongly Agree yielded a value of 0, Agree yielded a value of 1, Neutral yielded a value of 2, Disagree yielded a value of 3 and Strongly Disagree yielded a value of 4). Agreement responses were simply summed for each subtest. A total score of 0 indicated that a subject strongly agreed to all ten items in the subtest. A total score of 40 indicated a strong disagreement with the subtest. A total score of 20 in a subtest indicated neutral agreement.

(4) Product-moment correlations were computed for each item against total score for the subtest (See Tables 2,3 and 4, pages 24 and 25.) and each subtest was correlated between the other subtests. (See Table 5, page 25.) Coefficient Alpha (a measure of internal consistency) was computed for the items with the highest item--total correlations. Other items were added successively to this core of items in order of the magnitude of their correlations with total score. (See Table 1, page 23.) Items were retained only if their addition resulted in an increment to alpha. An item was retained, therefore, if it: (a) met reallocation standards, (b) had a high correlation (r = .40 with its

subtest total score, and (c) resulted in an increment to coefficient alpha.

Treatment of Data

The data generated from the pilot study was treated by a Sum Scores analysis (Dayton, 1970) and a Factor Analysis (Kerlinger, 1964). From Sum Scores analysis the following data were obtained:

(1) Coefficient alphas (split-half reliability).

(2) Intercorrelations of items within each subtest.

(3) Intercorrelations among three subtest consisting of ten items each.

(1) Coefficient alphas (split-half reliability).

TABLE 1

COEFFICIENT ALPHAS (SPLIT-HALF RELIABILITY) FOR THE WORK ETHIC INSTRUMENT

Subtest	N	Coefficient Alphas
Classical	10	.708
Consumer	10	.735
Meaningful	10	.735

(2) Intercorrelations of items within each subtest.

Table 2 contained the correlation of items within the Classical Work Ethic subtest, means and standard deviations. Three items fell below .4 and were revised

within the subtest. Other items ranged from .425 to .712.

TABLE 2

ITEM CORRELATIONS WITHIN SUBTEST, MEANS, AND STANDARD DEVIATION OF THE CLASSICAL WORK ETHIC OBTAINED DURING THE PILOT STUDY

Item	Correlation	Mean	Standard Deviation
Item 2	.575	3.859	.957
Item 6	.273	4.438	.995
Item 9	.332	3.833	1.043
Item 12	.708	3.603	.952
Item 14	.373	4.462	.654
Item 17	.425	4.438	.548
Item 19	.536	3.077	1.174
Item 22	.712	3.090	1.064
Item 26	.638	2.972	1.005
Item 28	.664	2.821	1.196

Table 3 contains the correlations of items within the Consumer Work Ethic subtest, means and standard deviations. Two items fell below .4 and were revised within the subtest. Other items ranged from .424 to .670.

TABLE 3

ITEM CORRELATIONS WITHIN SUBTEST, MEANS, AND STANDARD DEVIATION OF THE CONSUMER WORK ETHIC OBTAINED DURING THE PILOT STUDY

Item	Correlation	Mean	Standard Deviation
Item 1	.428	2.564	1.045
Item 5	.619	2.590	.940
Item 7	.317	3.962	1.018
Item 10	.555	3.923	.984
Item 15	.424	2.141	.902
Item 18	.627	2.128	.882
Item 21	.496	2.410	.940
Item 23	.603	2.615	.950
Item 25	.670	2.128	.882
Item 27	.397	1.615	.604

Table 4 contained the correlations of items within the Meaningful Work Ethic subscale, means and standard deviations. All items were above .4 and retained. Items ranged from .416 to .664.

TABLE 4

ITEM CORRELATIONS WITHIN SUBTEST, MEANS, AND STANDARD DEVIATIONS OF THE MEANINGFUL WORK ETHIC OBTAINED DURING THE PILOT STUDY

Item	Correlation	Mean	Standard Deviation
Item 2	.466	4.628	.509
Item 4	.550	4.462	.711
Item 8	.528	4.487	.655
Item 11	.416	4.115	.620
Item 13	.664	4.487	.549
Item 16	.508	4.077	.888
Item 20	.621	4.346	.657
Item 24	.657	4.321	.519
Item 29	.613	4.231	.504
Item 30	.555	4.038	.792

(3) Intercorrelations among three subtests, each of which includes 10 items.

TABLE 5

INTERCORRELATIONS AMONG SUBTESTS OBTAINED DURING THE PILOT STUDY

Subtest	Classical	Consumer	Meaningful
Classical	1.000	.198	.309
Consumer	.198	1.000	- .192
Meaningful	.309	- .192	1.000

Factor analysis (Kerlinger, 1964) following the BMDO3M program indicated the presence of three factors that accounted for 57 percent of the total variance in the matrix. (See Appendix B). The correlations among factors ranged from .02 to .79. Several strong items in each factor were indicated by the factor analysis. For the Classical Work Ethic factor, 6 items of the subtest had factor loadings above .40 (See Appendix B.) The Meaningful Work Ethic factor contained 7 items of the subtest that had factor loadings above .40. Factor analysis clustered items in terms of common response patterns.

The instrument developed in this study has met some of the common criteria (Nunnally, 1967) for construct validity. First, the success of the reallocation procedure demonstrated that the three work ethic subtests were discriminately different from one another and that the items well represented the constructs that they were intended to measure. Second, the internal consistencies of the subtests were relatively high. The third criteria, that an instrument's scores discriminated meaningfully among occupational groups, had not been attempted in this present study. However the presence of two common criteria (Nunnally, 1967) indicated that the instrument developed in this present study was considered to be a useful research tool.

Obtaining Research Permission for Phase I Main Study

The Director of the Bureau of Research in the county in which the Phase I study was to be conducted was contacted. The appropriate forms were filed and a copy of the instrument was sent to him. Permission was granted to use four senior high schools in the county.

Permission was further obtained from the principals of the four participating high schools. Meetings were held with the principals and faculties of the four schools to explain in detail the proposed study.

After administration and completion of the instrument in which only grade, curriculum and sex were asked for, no student's or teacher's names were solicited, the instrument was placed in a central box provided in each class. Every effort was made to maintain confidentiality and the anonymity of all participants.

The Main Study--Phase I

Data for the main study was gathered from four senior high schools in Baltimore County, Maryland. Approximately twenty-five hundred students in the tenth and eleventh grades and one hundred eighty teachers participated in the study.

Student Population

(1) Eastern Vocational-Technical High School

The number of students enrolled was 561. All students enrolled were in a vocational curriculum.

Because of absenteeism and incomplete answer sheets of the instrument, 450 students participated in the study by completing and returning the instrument.

(2) Overlea High School

The number of students enrolled was over 900. Students were either in a curriculum for preparation for college (N = 388) or a curriculum for preparation for employment (N = 480). Because of absenteeism and incomplete answer sheets, 868 students participated in the study. Forty-nine teachers participated.

(3) Hereford High School

The number of students enrolled at Hereford was 491. The number of students participating in the study was 321, including 147 in a college preparation curriculum and 174 in a curriculum for employment preparation. Forty-one teachers participated in the study. Hereford High School was located in a rural area of northern Baltimore County.

(4) Pikesville High School

The number of students enrolled at Pikesville was over 900. Because of absenteeism and incomplete answer sheets, 810 students participated in the study. Over three-fourths of the students at Pikesville were enrolled in a college preparation curriculum. Fifty-two teachers participated in the study. The school was located in the northwest suburban area of Baltimore County.

The procedure of the parent study followed closely the procedures of the pilot study. Students in the tenth and eleventh grades were provided with the instrument by their English teachers who had previously been instructed in the proper procedure of administration. The instrument required about fifteen minutes to complete. The instrument was collected into 2 large boxes by each teacher and returned to the principal's office. No codes or identification were used in order to assure anonymity.

Treatment of Data

Sum Scores Analysis (Dayton, 1970) was used to calculate intercorrelations of items in each of the three work ethic subscales and intercorrelations among scales. Factor analysis was used to analyze data in terms of factor loadings within each scale.

Unweighted means analysis (for factorial analysis of variance) was also used in analyzing the data (see Appendix B). Where groups or classes were combined, Hartley's F max was used to test the homogeneity of variance.

All interpretations were made at the .05 level of significance. Mean comparisons were made when data yielded significant F tests. The Newman-Keuls test for multiple comparison of more than two means was used.

Four separate runs using MANOVA (Multivariate Analysis of Variance) were used to analyze the data.

1) Unweighted means analysis comparing students within each work ethic subtest.

2) Analysis of Variance comparing teachers within each work ethic subtest.

3) Analysis of Variance comparing teachers and students within each value subtest.

4) Analysis of Variance comparing scores on each of three work ethic subtests within students.

Use was made of the Computer Science Center at the University of Maryland. The 1108 IBM Computer performed the calculations for the Sum Scores, Factor Analysis and Multivariate Analysis of Variance.

Chapter III contains a statistical analysis of the data, the testing of the hypotheses (converted to null form) stated in Chapter I of the study and a report of the findings.

CHAPTER III

PRESENTATION, TREATMENT AND ANALYSES OF DATA

The contents of this chapter includes the presentation, treatment and analyses of the data generated by the procedures discussed in Chapter II. It also includes the testing of restated hypotheses from Chapter I of the study. For statistical purposes the research hypotheses were converted into the null form.

The instrument developed for this study consisted of three combined subtests which measured and compared the adherence to three work ethics. (See Appendix A.)

Students and teachers were administered the instrument once during the study. The data obtained from the instrument were used in the testing of the hypotheses.

Treatment of Data

In accordance with a pre-planned design of the study all data were treated with a Multivariate Analysis of Variance. Four separate analyses were run on the data generated from the Parent Study and contained cell sizes and raw means for 1) Unweighted means analysis comparing students from four schools within each work ethic subtest. (See Table 6), 2) Analysis of Variance comparing scores on each of three work ethic subtests within

students. (See Table 12), 3) Analysis of Variance comparing teachers and students within each work ethic subtest (See Table 25), and 4) Analysis of Variance comparing vocational and academic teachers within each of the work ethic subtests. (See Table 18.)

The assumption of homogeneity of variance was tested prior to carrying out the analysis of variance. Hartley's F max test was used. The hypothesis of homogenity of variance was accepted.(See Appendix C.) It was concluded that the analysis of variance could be applied with assurance that equal variance assumption was satisfied.

The following section included a statement of each hypothesis, statistical data for each work ethic subtest relevant to each hypothesis and analysis of statistical data.

Testing of Hypotheses

Test of Hypothesis I

It was hypothesized that tenth and eleventh grade students from four high schools would not score significantly different means on subtests measuring adherence to three work ethics.

In testing Hypothesis I, an Analysis of Variance table (unweighted means solution)--(See Tables 6, 8, and 10 --and a means table were produced for each of the three work ethic subtests. (See Tables 7, 9, and 11.)

Classical Work Ethic. In the Classical Work Ethic subtest the scores of the students from the four schools

were significantly different. Data in Table 6 indicated a significant difference among the four schools when compared on the Classical Work Ethic subtest. A significant F ratio of 35.57 was computed with 3 and 2433 degrees of freedom.

TABLE 6

UNWEIGHTED MEANS ANALYSIS COMPARING WORK ETHIC SCORES AMONG TENTH AND ELEVENTH GRADE STUDENTS FROM FOUR DIFFERENT HIGH SCHOOLS IN BALTIMORE COUNTY, MARYLAND

Source	SS	DF	MS	F	
Error			25.34		
Location	21.800	3	901.11	35.57	*
Grade	2.722	1	337.53	13.32	*
Sex	.002	1	.25	.01	
LG	1.627	3	67.21	2.65	*
LS	1.368	3	56.54	2.23	
GS	.010	1	1.24	.05	
LGS	1.130	3	46.74	1.84	

*Significant at alpha = .05

Table 7 included the means of student's scores on the Classical Work Ethic subtest. This table was used with the Newman-Keuls technique to indicate which schools were significantly different on the Classical Work Ethic subtest.

TABLE 7

MEANS OF STUDENT CLASSICAL WORK ETHIC SCORES COMPARING FOUR HIGH SCHOOLS IN BALTIMORE COUNTY, MARYLAND

School	N	Means
Eastern Voc-Tech	496	11.2
Overlea	496	12.8
Hereford	496	12.9
Pikesville	496	14.5

In testing these four means (Table 7) for significance it was found by the Newman-Keuls (data presented below) technique (at an overall alpha of .05, each pairwise contrast was tested at alpha = .05), that students from Eastern Voc-Tech scored significantly lower than the other three schools (greater value placed in Classical Work Ethic). The students from Pikesville High School scored significantly higher than the other schools, thus indicating less value was placed on the Classical Work Ethic. There was not a significant difference found between students from Hereford High School and students from Overlea High School.

Newman-Keuls

n = 496

Sm = .225

Means = 11.2 12.8 12.9 14.5

12.8 - 11.2	=	1.6	Significant over 2 ranks
12.9 - 11.2	=	1.7	Significant over 3 ranks
14.5 - 11.2	=	3.3	Significant over 4 ranks
14.5 - 12.8	=	1.7	Significant over 3 ranks
14.5 - 12.9	=	1.6	Significant over 2 ranks

Consumer Work Ethic. Students from the four schools scored significantly different on the Consumer Work Ethic subtest. Results of analysis were presented in Table 8 where an overall F of 8.48 with 3 and 2433 degrees of freedom was calculated.

TABLE 8

UNWEIGHTED MEANS ANALYSIS COMPARING CONSUMER WORK ETHIC SCORES AMONG TENTH AND ELEVENTH GRADE STUDENTS FROM FOUR DIFFERENT HIGH SCHOOLS IN BALTIMORE COUNTY, MARYLAND

Source	SS	DF	MS	F	
Error			22.53		
Location	4.623	3	191.08	8.48	*
Grade	.360	1	44.64	1.98	
Sex	10.240	1	1269.76	56.37	*
LG	.365	3	15.13	.67	
LS	1.365	3	56.42	2.50	
GS	.722	1	89.53	3.97	*
LGS	.783	3	32.36	1.43	

*Significant at alpha = .05

The means for the four schools were presented in Table 9.

TABLE 9

MEANS OF STUDENT CONSUMER WORK ETHIC SCORES COMPARING DATA FROM FOUR HIGH SCHOOLS IN BALTIMORE COUNTY, MARYLAND

School	N	Means
Eastern Voc-Tech	496	20.5
Overlea	496	20.7
Hereford	496	21.2
Pikesville	496	21.4

It was found by the Newman-Keuls technique (data presented below) that there was a significant difference between the students from Eastern High School and students from Pikesville High School. Eastern High School students scored significantly lower with a calculated means of 20.5 to 21.4.

Newman-Keuls

n = 496

Sm = .213

Means = 20.5 20.7 21.2 21.4

Pikesville High School Eastern Voc-Tech

21.4 20.5 = .9

(significant over 4 ranks)

Meaningful Work Ethic. Students from the four schools scored significantly different on the Meaningful Work Ethic subtest. As indicated from Table 10, an overall F of 21.93 which was significant with 3 and 2443 degrees of freedom calculated.

TABLE 10

UNWEIGHTED MEANS ANALYSIS COMPARING MEANINGFUL WORK ETHIC SCORES AMONG TENTH AND ELEVENTH GRADE STUDENTS FROM FOUR DIFFERENT HIGH SCHOOLS IN BALTIMORE COUNTY, MARYLAND

	SS	DF	MS	F	
Error			22.12		
Location	11.737	3	485.09	21.93	*
Grade	1.381	1	171.24	7.74	*
Sex	3.331	1	413.04	18.67	*
LG	2.042	3	84.44	3.82	*
LS	1.442	3	59.64	2.70	*
GS	.001	1	.12	.01	
LGS	.602	3	24.92	1.12	

*Significant at alpha = .05

The mean scores of the students from the four schools were presented in Table 11.

In using the Newman-Keuls (data presented below) technique for specific mean contrasts, it was found that students from the Eastern Voc-Tech scored significantly lower than the other students from the three schools.

TABLE 11

MEANS OF STUDENTS MEANINGFUL WORK ETHIC SCORES COMPARING FOUR HIGH SCHOOLS IN BALTIMORE COUNTY, MARYLAND

School	N	Means
Eastern Voc-Tech	496	6.57
Overlea	496	8.95
Hereford	496	8.10
Pikesville	496	8.10

(greater value placed in this area). It was also found that students from Overlea scored significantly higher in the Meaningful Work Ethic than the other schools (less value placed in this work ethic by students from Overlea).

Newman-Keuls

n = 496

Sm = .21

Means = 6.57 8.10 8.10 8.95

8.10 - 6.75 = 1.53 Significant over 2 ranks

8.95 - 6.57 = 2.38 Significant over 4 ranks

8.95 - 8.10 = .75 Significant over 2 ranks

Information contained in the six tables above indicated that there were significant differences existing between students from the four high schools in the three work ethic subtests. The null hypothesis I was therefore rejected and the research hypothesis accepted.

Test of Hypothesis II

It was hypothesized that students from four schools in Baltimore County, Maryland would not score significantly different means within the three work ethic subtests.

The data used to test Hypothesis II was derived from scores of students on the instrument which measured adherence to the three work ethics. Analysis of Variance was used to treat scores in the three work ethic subtests.

It was found that the students scored differently in the three work ethic subtests. Table 12 indicated that a significant F of 255.23 2ith 2 and 293 degrees of freedom was calculated.

TABLE 12

ANALYSIS OF VARIANCE COMPARING STUDENT SCORES IN THREE WORK ETHIC SUBTESTS FROM FOUR SCHOOLS IN BALTIMORE COUNTY, MARYLAND

Source	SS	DF	MS	F	
Error	6085.27	293	20.77	255.23	*
Work Ethics	10601.73	2	5300.86		

*Significant at alpha = .05

Analysis of mean differences found in Table 12 was treated by the Newman-Keuls technique. It was found that students valued the Meaningful Work Ethic more than the Consumer Work Ethic and the Classical Work Ethic. The

analysis also indicated that students valued the Consumer Work Ethic less than the Classical and Meaningful Work Ethic.

Table 13 contained the calculated means for each work ethic subtest. The data was used in the Newman-Keuls technique to calculate differences between work ethic means.

TABLE 13

MEANS OF STUDENT SCORES DERIVED FROM THREE WORK ETHIC SUBTESTS AS TAKEN IN FOUR SCHOOLS IN BALTIMORE COUNTY, Maryland (Tenth and Eleventh Grades)

Subtest	N	Means
Classical	100	10.44
Consumer	100	20.28
Meaningful	100	5.95

Newman-Keuls

n = 100

Sm = .46

Means = 5.94 10.44 20.28

Consumer Classical

20.28 - 10.44 = 9.84 Significant over 2 ranks

Consumer Meaningful

20.28 - 5.95 = 14.34 Significant over 3 ranks

Classical Meaningful

10.44 - 5.94 = 4.50 Significant over 2 ranks

The information in Table 12 indicated that a significant difference existed between students' scores on the three work ethic subtests. Null hypothesis II was therefore rejected and the research hypothesis was accepted.

Test of Hypothesis III

It was hypothesized that tenth and eleventh grade students from two different curriculums (preparation for employment and college prep) would not score significantly different means within three work ethic subtests.

The data used to test Hypothesis III was derived from the instrument developed to measure adherence to the three work ethics. Analysis of Variance was used to treat student scores in each of the subtests.

The mean scores between the two curriculums were presented in Table 14.

TABLE 14

MEANS USED IN ANALYSIS OF VARIANCE IN COMPARING VOCATIONAL STUDENTS TO COLLEGE PREP STUDENTS IN THREE WORK ETHIC TESTS FROM FOUR SCHOOLS IN BALTIMORE COUNTY, MARYLAND

	N	Classical	Consumer	Meaningful
Vocational	1211	13.98	20.17	8.27
College Prep	1238	12.27	22.22	8.06

The analysis summerized in Table 15 indicated that students in a vocational curriculum scored significantly

different from students in a college prep curriculum in the Classical Work Ethic subtest. Vocational students scored a mean of 13.98 to a mean of 12.27 for college prep students. A significant F of 67.33 with 1 and 2447 degrees of freedom was calculated from this statistical treatment.

TABLE 15

ANALYSIS OF VARIANCE COMPARING BALTIMORE COUNTY STUDENTS IN VOCATIONAL CURRICULUMS TO THOSE IN COLLEGE PREP CURRICULUMS IN THE CLASSICAL WORK ETHIC SUBTESTS

Source	SS	DF	MS	F	
Error	64960.34	2447	26.55	67.33	*
Curriculum	1787.50	1	1787.50		

*Significant at alpha = .05

Data from the subtest of the Consumer Work Ethic indicated a significant F of 113.17 with 1 and 2447 degrees of freedom. The vocational students scored a mean of 22.2 as compared to a mean of 20.17 for college prep students. Table 16 summarized this analysis.

TABLE 16

ANALYSIS OF VARIANCE COMPARING BALTIMORE COUNTY STUDENTS IN VOCATIONAL CURRICULUMS TO THOSE IN COLLEGE PREP CURRICULUMS IN THE CONSUMER WORK ETHIC SUBTEST

Source	SS	DF	MS	F	
Error	56874.27	2447	23.24	1.17	*
Curriculum	27.09	1	27.09		

*Not significant at alpha = .05

Data from the subtest of the Meaningful Work Ethic indicated that students in the two curriculums did not significantly differ. The vocational students scored a mean of 8.06 to a mean of 8.27 for college prep students. The summary of the analysis was presented in Table 17.

TABLE 17

ANALYSIS OF VARIANCE COMPARING BALTIMORE COUNTY STUDENTS IN VOCATIONAL CURRICULUMS TO THOSE IN COLLEGE PREP CURRICULUMS IN THE MEANINGFUL WORK ETHIC SUBTEST

Source	SS	DF	MS	F	
Error	56974.27	2447	23.24	1.17	*
Curriculum	27.09	1	27.09		

*Not significant at alpha = .05

The information cited in Tables 15 and 16 indicated that significant differences existed between student scores from two different curriculums in two work ethic subtests (Classical and Consumer), but no significant difference in a third work ethic subtest. Therefore the null hypothesis was accepted and the research hypothesis rejected.

Test of Hypothesis IV

It was hypothesized that academic teachers would not score significantly different means than vocational teachers within the three work ethic subtests.

The data used to test Hypothesis IV was derived from scores of teachers obtained from the subtests of the

instrument developed for this study. Analysis of Variance was used to treat the scores obtained on the instrument in testing this hypothesis.

Table 18 contained the means of teachers in each of the three work ethic subtests. This data was treated with the Analysis of Variance and Newman-Keuls.

TABLE 18

MEANS USED IN ANALYSIS OF VARIANCE IN COMPARING VOCATIONAL TEACHERS TO ACADEMIC TEACHERS IN THREE WORK THIC SUBTESTS FROM FOUR SCHOOLS IN BALTIMORE COUNTY, MARYLAND

Teachers	N	Classical	Consumer	Meaningful
Vocational Teachers	43	11.23	24.07	5.39
Academic Teachers	43	13.37	24.3	6.88

Tables 19 to 21 summarized Analysis of Variance comparing vocational teachers and academic teachers in each of the three work ethic subtests. In each analysis non significance was calculated. Null hypothesis IV was accepted and the research hypothesis was rejected.

TABLE 19

ANALYSIS OF VARIANCE COMPARING VOCATIONAL TEACHERS TO ACADEMIC TEACHERS IN THE CLASSICAL WORK ETHIC SUBTEST

Source	SS	DF	MS	F	
Error	2855.72	84	33.99	2.89	*
Vocational/ Academic	98.41	1	98.41		

*Not significant at alpha = .05

TABLE 20

ANALYSIS OF VARIANCE COMPARING VOCATIONAL TEACHERS TO ACADEMIC TEACHERS IN THE CONSUMER WORK ETHIC SUBTEST

Source	SS	DF	MS	F	
Error	1312.55	84	15.62	.107	*
Vocational/ Academic	1.67	1	1.6		

*Not significant at alpha = .05

TABLE 21

ANALYSIS OF VARIANCE COMPARING VOCATIONAL TEACHERS TO ACADEMIC TEACHERS IN THE MEANINGFUL WORK ETHIC SUBTEST

Source	SS	DF	MS	F	
Error	1356.69	84	16.15	2.94	*
Vocational/ Academic	47.62	1	47.62		

*Not significant at alpha = .05

Test of Hypothesis V

It was hypothesized that students would not score significantly different means than teachers when tested on an instrument incorporating three work ethic subtests.

The data used to test Hypothesis V was derived from the instrument developed in this study to measure adherence to three work ethics. Analysis of Variance was used to treat the scores of teachers and students in each

of the three subtests of the instrument.

Data obtained from the Classical Work Ethic subtest indicated that a significant difference between means was not found when comparing students to teachers. Calculated mean for teachers was 12.59 as compared to a calculated mean of 13.12 for students. This difference in scores resulted in a F ratio of .848 with 1 and 370 degrees of freedom. (See Table 22.)

TABLE 22

ANALYSIS OF VARIANCE TABLE COMPARING STUDENT AND TEACHER SCORES IN THE CLASSICAL WORK ETHIC SUBTEST

Source	SS	DF	MS	F	
Error	11725.28	370	31.69	.848	*
Student/ Teacher	26.88	1	26.88		

*Not significant at alpha = .05

Data obtained from the Consumer Work Ethic subtest indicated that students obtained a mean of 24.01 as compared to a mean of 20.87 for teachers (lower score means higher value given to this work ethic subtest). This difference in means (Table 23) was significant with a F ratio of 46.88 with 1 and 370 degrees of freedom.

TABLE 23

ANALYSIS OF VARIANCE COMPARING STUDENT AND TEACHER SCORES IN THE CONSUMER WORK ETHIC SUBTEST

Source	SS	DF	MS	F	
Error	7261.62	370	19.63	46.88	*
Student/ Teacher	919.96	1	919.96		

*Significant at alpha = .05

Data obtained from the Meaningful Work Ethic subtest indicated a mean of 8.10 for teachers and a mean of 5.86 for students. The difference between these two means proved to be significant with a F of 25.12 with 1 and 370 degrees of freedom. (See Table 24.)

TABLE 24

ANALYSIS OF VARIANCE COMPARING STUDENT AND TEACHER SCORES IN THE MEANINGFUL WORK ETHIC SUBTEST

Source	SS	DF	MS	F	
Error	6885.34	370	18.609	25.12	*
Student/ Teacher	467.44	1	467.44		

*Significant at alpha = .05

The following table (Table 25) gave the means for students and teachers in each of the three work ethic subtests. The data contained in this table was used in the Analysis of Variance comparing student/teacher scores

in the three work ethic subtests.

TABLE 25

MEANS OF THREE WORK ETHIC SUBTESTS* AS USED IN ANALYSIS OF VARIANCE IN COMPARING STUDENTS TO TEACHERS IN FOUR HIGH SCHOOLS IN BALTIMORE COUNTY, MARYLAND

	N	Classical	Consumer	Meaningful
Students	186	12.6	24.0	5.9
Teachers	186	13.1	20.9	8.1

*Raw means

The data presented in Tables 22 to 24 indicated that teachers scored significantly different means than students on two subtests (Consumer and Meaningful). However, no significant differences existed between scores of teachers and students on the Classical Work Ethic subtest. Since all tests were not significant, the null hypothesis was accepted and the research hypothesis was rejected.

Additional analysis of data indicated grade level differences and sex differences of students' scores on the three work ethic subtests.

Grade Level Differences

It was found that students in the tenth grade scored significantly different means from eleventh grade students in the Classical and Meaningful Work Ethic subtests.

Tenth graders had a mean score of 12.44 as compared to 13.26 for eleventh graders in the Classical Work Ethic

subtest. A significant F ratio of 13.32 was computed with 1 and 2433 degrees of freedom. (See Table 6, page 33.)

Data obtained from the subtest of the Meaningful Work Ethic indicated that tenth graders had a mean score of 7.63 as compared to a mean of 8.23 for eleventh graders. A significant F ratio of 7.74 which was significant with 1 and 2433 degrees of freedom was calculated. (See Table 10, page 37.)

The above analysis also resulted in significant Location and Grade interactions in two work ethics (Classical and Meaningful). Table 6 (Unweighted Means Analysis Comparing Classical Work Ethic Scores Among Students) indicated a significant F ratio of 3.83 with 3 and 2433 degrees of freedom. The interaction mean scores can be seen in the following two tables. (See Tables 26 and 27.)

TABLE 26

MEAN SCORES FOR LOCATION AND GRADE INTERACTIONS FOR TENTH AND ELEVENTH GRADE STUDENTS FROM FOUR SCHOOLS IN BALTIMORE COUNTY, MARYLAND IN THE CLASSICAL WORK ETHIC SUBTEST

Grade	Eastern	Overlea	Hereford	Pikesville
Tenth	10.65	12.50	12.90	13.65
Eleventh	11.75	13.05	12.90	15.35

Newman-Keuls

n = 248

Sm = .319

10.65 11.75 12.50 13.05 12.90 13.65 15.35

It was found by the Newman-Keuls technique that there was not a significant difference between tenth and eleventh graders at Overlea High School or Hereford High School.

It was also found that the tenth graders from Eastern Voc-Tech scored significantly lower than all other tenth graders and eleventh graders on the Classical Work Ethic subtest (indicating a higher adherence to the Classical Work Ethic). Eleventh grade students from Pikesville High School also scored significantly higher than all other students on the Classical Work Ethic subtest (indicating a lower adherence to the Classical Work Ethic).

TABLE 27

MEAN SCORES FOR LOCATION AND GRADE INTERACTIONS FOR TENTH AND ELEVENTH GRADE STUDENTS FROM FOUR SCHOOLS IN BALTIMORE COUNTY, MARYLAND IN THE MEANINGFUL WORK ETHIC

Grade	Eastern	Overlea	Hereford	Pikesville
Tenth	6.20	8.5	8.4	7.45
Eleventh	6.95	9.4	7.8	8.75

Newman-Keuls

n = 248

Sm = .298

6.20	6.95	7.45	7.8	8.4	8.5	8.75	9.4

It was found by the Newman-Keuls technique that tenth graders from Eastern Voc-Tech scored significantly different than all other students tested on the Meaningful Work Ethic subtest. These students had a higher adherence to the Meaningful Work Ethic. Eleventh graders from Overlea scored significantly different on the Meaningful Work Ethic subtest than all other students. These students had the lowest adherence to the Meaningful Work Ethic.

Figure 1 indicated the differences between means of tenth and eleventh grade students from four schools in the Classical Work Ethic. Figure 2 indicated the differences between means of tenth and eleventh grade students from four schools in the Meaningful Work Ethic.

Sex Differences

It was found by this analysis that males scored significantly different means than females in the Consumer and Meaningful Work Ethic subtests.

Males had a mean score of 20.29 as compared to 21.89 for females on the Consumer Work Ethic subtest. Table 8 indicated the significance of this difference where a significant F of 56.37 with 1 and 243 degrees of freedom

Figure 1

Mean Comparisons of Classical Work Ethic Location and Grade Interaction Scores for Tenth and Eleventh Grade Students from Four Schools in Baltimore County, Maryland

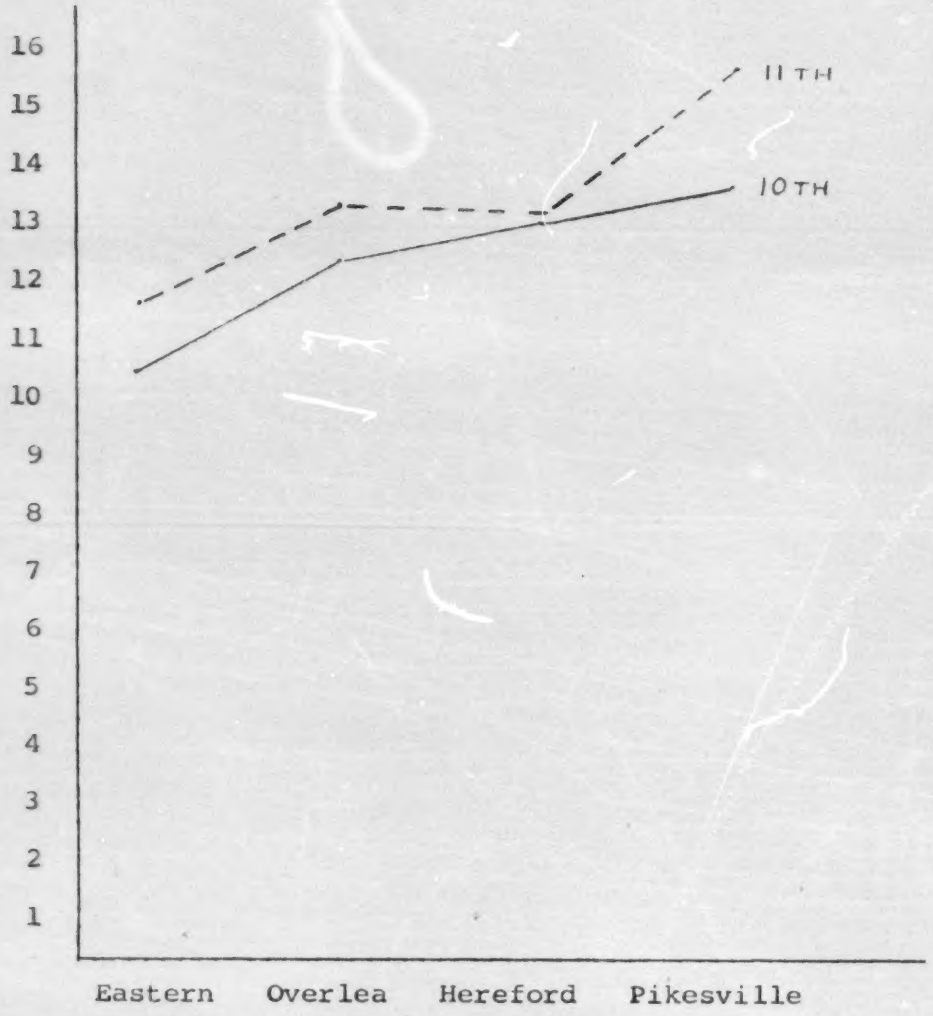
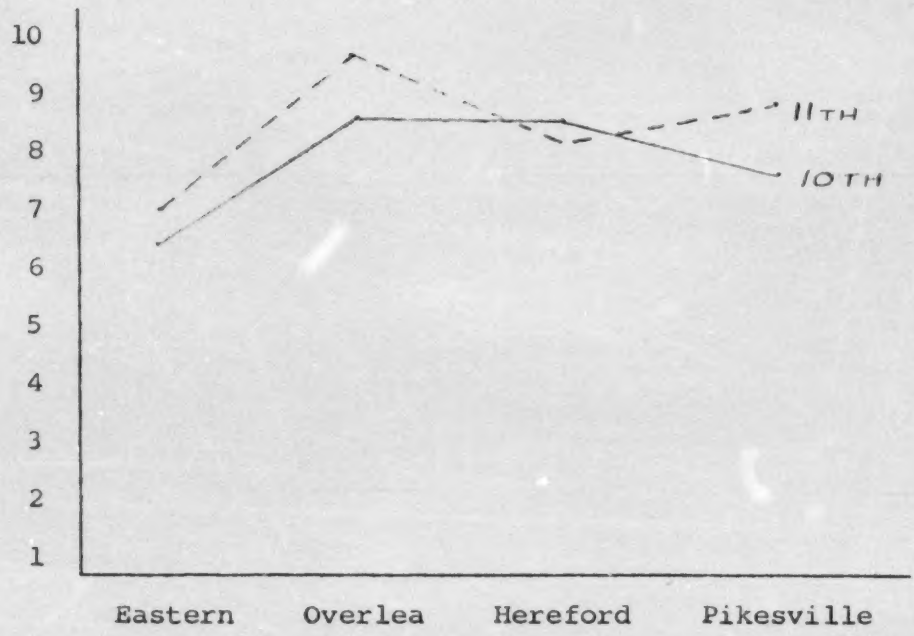


Figure 2

Mean Comparison of Meaningful Work Ethic Location and Grade Interaction Scores for Tenth and Eleventh Grade Students from Four Schools in Baltimore County, Maryland



was calculated. (Males had a higher adherence to the Consumer Work Ethic.)

Data obtained from the subtest of the Meaningful Work Ethic indicated that males had a mean of 8.39 to 7.48 for females. As can be seen from Table 10, a F of 18.67, which was significant with 1 and 2433 degrees of freedom, was calculated. (Females have a higher adherence to the Meaningful Work Ethic than males.)

Discussion

In this study the researcher attempted to measure the adherence of students and teachers to three work ethics. In the following pages each work ethic was discussed in terms of the data generated by the instrument developed for this study.

Classical (Protestant) Work Ethic

The factors of the Classical Work Ethic included a preference by the worker to keep active on the job, the desire to seek continually a higher level and a better standard of living. It also included a preference to work hard, to work regularly because it was one's obligation to society and an obedience and respect for authority (Davis, 1974; Wollack, 1971). These factors were contained in the ten items of the Classical Work Ethic subtest.

When specific schools were considered the findings of the study provided evidence that students from Eastern Voc-Tech High School valued this ethic significantly more than other students. However, students from Pikesville

High School placed significantly less value on this ethic than all other students tested. A probable reason for this finding was that teachers tended to influence student work values toward their own.

Ward's (1974) study,cited in the review of literature, stated that teachers may have unintentionally influenced student work values. Data from the present study comparing vocational and academic teachers adherence to the Classical Work Ethic indicated a higher tendency for vocational teachers to adhere to the Classical Work Ethic than academic teachers. Eastern Voc-Tech High School was predominately staffed by vocational teachers whereas Pikesville High School was predominately staffed by academic teachers. Therefore, a probable reason for the difference in adherence to the Classical Work Ethic between students from Eastern and students from Pikesville was a result of teachers having influenced students toward their own work values.

Other probable reasons for differences between students at Eastern and Pikesville were attributed to socio-economic background, parental influence and previous work experience, information which was attempted but was not able to be obtained for this study.

The findings of the study provided evidence that students in a college prep curriculum valued the Classical Work Ethic significantly more than students from a vocational curriculum. This appeared to contradict the finding cited above which indicated there were differences

between Eastern Voc-Tech students (predominately with vocational curriculum) and Pikesville students (predominately with an academic curriculum). A probable reason for the finding that college prep students valued the Classical Work Ethic more than vocational students was that the vocational students in the other two schools (Hereford and Overlea) did not value the Classical Ethic as did the vocational students from Eastern. Reasons may have been found in the socio-economic background, parental influence and previous work experience of students. The gathering of the data was attempted but could not be obtained for the study.

In analyzing the data presented under Hypothesis II, there was evidence to indicate that students had a higher adherence to the Classical Work Ethic than to the Consumer Work Ethic. The higher scores in the Classical Work Ethic subtest suggested to this researcher that students had a preference to work hard, a preference for activity on the job, a preference for upward striving and preferred obedience and respect for authority more than a preference for monetary or social benefits from a job.

Consumer Work Ethic

The Consumer Work Ethic consisted of two factors--the economic and societal. It was the degree to which economic and societal rewards of work were valued (Herzberg, 1974). The Consumer Work Ethic subtest contained ten items reflecting these factors.

The findings of the study provided evidence that students from Eastern Voc-Tech High School valued the Consumer Work Ethic significantly more than students from the other three schools tested. Consistent with this finding was the evidence that all students in a vocational curriculum valued the Consumer Work Ethic significantly more than all students in an academic curriculum. A probably reason inferred from these findings was that vocational students had a more immediate need for economic support than students in a college prep curriculum. Since college prep students were planning to go to college, they were willing to defer monetary gains until a later date. Socio-economic backgrounds of students may have contributed to these findings; however, this data was not available for this study.

The findings of the study provided evidence that teachers valued the Consumer Work Ethic significantly more than students. A probable reason for this finding was due to the fact that teachers had more financial obligations than students.

Sex differences in the adherence to the Consumer Work Ethic were also found. Male students placed a significantly higher value on monetary returns and social benefits of a job than female students. A possible reason inferred from this finding that male students had more immediate needs for money to provide for social situations than females.

Meaningful Work Ethic

The factors of the Meaningful Work Ethic included the degree to which work was interesting, the use of skill or talent, the feeling of satisfaction and achievement from seeing the results of one's work, responsibility on the job, and work that was challenging (Herzberg, 1974; Terkel, 1972). The Meaningful Work Ethic subtest consisted of ten items reflecting these factors.

The findings of the study provided evidence that students from Eastern Voc-Tech High School valued the Meaningful Work Ethic significantly more than students from the other three schools tested. A probable reason for the finding was found in the subtest items reflecting the need to use one's skill or talent and the need to feel satisfaction and achievement from seeing the results of one's work. Students at Eastern were involved in vocational training classes where they had opportunity to satisfy these factors reflected in the Meaningful Work Ethic. Students from Hereford and Overlea High Schools valued this work ethic significantly less than students from Eastern and Pikesville. A probable reason for this finding was that the student population in both Hereford and Overlea had a greater combination of both academic and vocational students; therefore, significant difference was due to population.

The findings of the study provided evidence that students valued the Meaningful Work Ethic significantly more than either the Consumer or Classical Work Ethics.

This finding was in support of the literature in the field (Yankelovich, 1972). Students had a preference for work that was interesting, challenging, offered a sense of responsibility and allowed for use of one's talents and aptitudes. Consistent with this finding, there was evidence to indicate that students valued the Meaningful Work Ethic significantly more than teachers. A probable reason for this finding was found in areas of previous work experience and socio-economic background of subjects. Teachers had greater interests in the Consumer Work Ethic, as previously indicated, and were not as committed to the Meaningful Work Ethic as students.

The findings of this study provided evidence that female students had significantly greater value for the Meaningful Work Ethic than male students. Female students prefered work that was interesting, challenging and offered a sense of responsibility. A probable reason for this finding was found in the fact that female students were not as concerned about the need to obtain money as males might have been in senior high school.

As indicated in the introduction of this report, it was decided that an instrument with more work ethics and following an etiological approach would extend the power of a new questionnaire. This became the thrust of Phase II.

In Volume II, Phase II, further analyses of these findings will be referred to and inferences for social studies and vocational education will be made.

APPENDIX A

THE WORK ETHIC INVENTORY

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